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[TITLE] Human Antithrombin Variants

[ABSTRACT]

Human antithrombin variants showing a high protease inhibitory activity even in the absence of heparin wherein at least one of the amino acids at positions 78, 278, 378 and 380 in the amino acid sequence of natural human antithrombin is substituted by another amino acid. Preferable examples thereof are human antithrombin variants wherein the amino acid at position 78 is substituted by Phe; the amino acid at position 278 is substituted by Ala, Arg, Asn, Gly, His, Tyr or Val; the amino acid at position 378 is substituted by Lys, Asn or Val; and/or the amino acid at position 380 is substituted by Ala, Asp, Gly, His, Ile, Leu, Asn, Pro, Arg, Thr, Tyr or Val.